APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,988	09/19/2005	Jean Schmitt	034299-667	1037

7590   08/18/2008

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CEHIC, KENAN

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
08/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/549,988	SCHMITT ET AL.
	Examiner	Art Unit	
	KENAN CEHIC	2616	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2008*.

2a)☒ This action is **FINAL**.　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　　1.☐ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 5 is objected to because of the following informalities:

For claim 5, it is suggested to change "characterized in the bandwidth", to --

characterized in that the bandwidth--

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the

written description requirement. The claim(s) contains subject matter which was not described

in the specification in such a way as to reasonably convey to one skilled in the relevant art that

the inventor(s), at the time the application was filed, had possession of the claimed invention.

For claim 6, "the evaluation of the bandwidth is achieved off-line" was not adequately

described in the specification; it is not clear how to perform the invention "off-line", nor

is it clear what exactly the term "off-line" encompasses. One is not enabled how the

invention can be performed "off-line" since the specification recites multiple instances of

communication / packet transmission on which the bandwidth calculation actively

depends on. Applicants definition of "off-line" does not bring any clarity, since it

reaffirms that "off-line" means that no communication is present and the method depends

on measurement/reception of data packets received/ transmitted.

3.   Claim 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

For claim 6, the limitation "evaluated off-line" is unclear/indefinite. It is not clear how

the method can be performed "off-line" since independent claim 1 recites multiple

instances of communication / packet transmission on which the bandwidth calculation

actively depends on. Applicants definition of "off-line" does not bring any clarity, since it

reaffirms that "off-line" means that no communication is present and the method depends

on measurement/reception of data packets received/ transmitted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.

      3.   Resolving the level of ordinary skill in the pertinent art.

      4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4.   Claim 1, 4,5,7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross (US 6,850,541) in view of Zhang et al. (US 7,133,368).

For claim 1, Gross discloses a method for evaluating the bandwidth (see Figure 6a and 6b 620-640 and column 4 lines 21-24 "procedure for using sets of packet pairs to determine the bandwidth") between a first point (see Figure 4, 465, 105) and a second point (see Figure 4, 470, 110) liable to exchange digital data packets (see Figure 4, 402, 403 and column 2 lines 60-62 "sends out sets of packet pairs") in a telecommunications network (see Figure 6a, 610, "network"), characterized in that it includes the following steps:

a. associating a same identifier (see column 3 lines 22-27 "Each set of packets uses a different packet size…set 402..packet size of 96 bytes…set 403…packet size of 512 bytes" and column 3 lines 28-33 "packet pairs of one set are binned separately from the time deltas for the packet pairs of the other set") with the quasi-simultaneously transmitted packets (see Figure 6a, 610, "send the sets packet pairs"),

b. recording the received packets (see column 3 lines 48-51 " measuring time a packet arrives...first packet arrives...second packet arrives"),

c. identifying (see column 6 lines 10-14 "first and second sets of packet pairs...determining a time delta for each packet pair in the first and second sets" and column 4 lines 27-30 " and column 5 lines 45-47 "two sets of packet pairs...each set...different packet size") and sorting the packets received (see column 3 lines 48-52 "Packet classifier...packet arrives...first packet arrives....second packet arrives"; the two packets are classified according to arrival time) with the same identifier (see column 6 lines 10-14 "first and second sets of packet pairs...determining a time delta for each packet pair in the first and second sets" and column 4 lines 27-30 " and column 5 lines 45-47 "two sets of packet pairs...each set...different packet size" and column 3 lines 22-27 "Each set of packets uses a different packet size...set 402..packet size of 96 bytes...set 403...packet size of 512 bytes" and column 3 lines 28-33 "packet pairs of one set are binned separately from the time deltas for the packet pairs of the other set"),

d. selecting (see Figure 6B and column 4 lines 31-47 "...bins are compared...any bins are eliminated if...bins...less than average bandwidth are eliminated...bins are eliminated...selected as the network bandwidth") the largest possible integral number m (see column 4 lines 8-10 "bin...the amplitude...indicates the number of packet pairs...whose time delta fits..") of groups of packets (see column 4 lines 8-10 "bin...the amplitude...indicates the number of packet pairs...whose time delta fits..") with the same identifier (see Figure 5 "Large Packet Size" and "Small packet Size" and column 4 lines 13-20 "small packet size set....large packet size set")

e. measuring (see column 3 lines 9-10 "measured") the time intervals separating (see

column 3 lines 9-10 "time delta for each packet pair has been measured" and column 3

lines 47-52 "subtracting the time the first packet…from the time the second packet…time

delta may be determined") the instants when the packets (see column 3 lines 48-51 "

measuring time a packet arrives…first packet arrives…second packet arrives") of the

selected groups (see Figure 5 "Large Packet Size" and "Small packet Size" and column 4

lines 5-20 "number or packets…small packet size set …large packet size set, and Figure

6B and column 4 lines 31-47 "…bins are compared…any bins are eliminated

if…bins…less than average bandwidth are eliminated…bins are eliminated…selected as

the network bandwidth") are received (see column 3 lines 48-52 "Packet

classifier…packet arrives…first packet arrives….second packet arrives"; the two packets

are classified according to arrival time) by the second point (see Figure 4, 110, 470,475),

f. calculating the bandwidth (see Figure 6a and 6b 620-640 and column 4 lines 21-24

"procedure for using sets of packet pairs to determine the bandwidth") according to the

number of packets (see column 4 lines 8-10 "the amplitude…indicates the number of

packet pairs", and column 4 lines 31-47 "bins are compared…bins…are

eliminated….have a greater amplitude…bins with the highest remaining

amplitude…have an amplitude less than a threshold…are eliminated") of the selected

groups (see Figure 5 "Large Packet Size" and "Small packet Size" and column 4 lines 5-

20 "number or packets…small packet size set …large packet size set, and Figure 6B and

column 4 lines 31-47 "each set placed in a different bin…bins are compared…any bins

are eliminated if…bins…less than average bandwidth are eliminated…bins are

eliminated…selected as the network bandwidth") and to the total transmission time of

these packets (see column 4 lines 31-32 "time deltas are placed in bins" and column 3

line 48-52 "measuring the time a packet arrives…time the first packet arrives…time

second packet arrives….time delta"; delta depends on packet arrival time, packet arrival

time depends on transit time of the packet).

For claim 5, Gross discloses, characterized in that the evaluation of the bandwidth (see

Figure 6a-b, 61-640 and column 4 lines 20-23 "determine bandwidth") is achieved on-

line (see Figure 4, 402, 403 and column 2 lines 60-62 "sends out sets of packet pairs" and

see column 3 lines 48-51 " measuring time a packet arrives…first packet arrives…second

packet arrives").

For claim 8, Gross discloses a device (see fig 4; 105, 402, 403, 110); for evaluating

the bandwidth (see Figure 6a and 6b 620-640 and column 4 lines 21-24 "procedure for

using sets of packet pairs to determine the bandwidth") between a first point (see Figure

4, 465, 105) and a second point (see Figure 4, 470, 110) liable to exchange digital data

packets (see Figure 4, 402, 403 and column 2 lines 60-62 "sends out sets of packet pairs")

in a telecommunications network (see Figure 6a, 610, "network") including a mode for analyzing

the received packets (see fig 4; 110), characterized in that it includes the following steps:

means (see fig 4; 105, 402, 403, 110) for associating a same identifier (see column 3

lines 22-27 "Each set of packets uses a different packet size…set 402..packet size of 96

bytes…set 403…packet size of 512 bytes" and column 3 lines 28-33 "packet pairs of one

set are binned separately from the time deltas for the packet pairs of the other set") with

the quasi-simultaneously transmitted packets (see Figure 6a, 610, "send the sets packet

pairs"),

means (see fig 4; 105, 402, 403, 110) for identifying (see column 6 lines 10-14 "first

and second sets of packet pairs...determining a time delta for each packet pair in the first

and second sets" and column 4 lines 27-30 " and column 5 lines 45-47 "two sets of

packet pairs...each set...different packet size") and sorting the packets received (see

column 3 lines 48-52 "Packet classifier...packet arrives...first packet arrives....second

packet arrives"; the two packets are classified according to arrival time) with the same

identifier (see column 6 lines 10-14 "first and second sets of packet pairs...determining a

time delta for each packet pair in the first and second sets" and column 4 lines 27-30 "

and column 5 lines 45-47 "two sets of packet pairs...each set...different packet size" and

column 3 lines 22-27 "Each set of packets uses a different packet size...set 402..packet

size of 96 bytes...set 403...packet size of 512 bytes" and column 3 lines 28-33 "packet

pairs of one set are binned separately from the time deltas for the packet pairs of the other

set"),

means (see fig 4; 105, 402, 403, 110) for selecting (see Figure 6B and column 4 lines

31-47 "...bins are compared...any bins are eliminated if...bins...less than average

bandwidth are eliminated...bins are eliminated...selected as the network bandwidth")

the largest possible integral number m (see column 4 lines 8-10 "bin...the

amplitude...indicates the number of packet pairs...whose time delta fits..") of groups of

packets (see column 4 lines 8-10 "bin...the amplitude...indicates the number of packet

pairs...whose time delta fits..") with the same identifier (see Figure 5 "Large Packet

Size" and "Small packet Size" and column 4 lines 13-20 "small packet size set....large

packet size set")

means (see fig 4; 105, 402, 403, 110) for measuring (see column 3 lines 9-10

"measured") the time intervals separating (see column 3 lines 9-10 "time delta for each

packet pair has been measured" and column 3 lines 47-52 "subtracting the time the first

packet...from the time the second packet...time delta may be determined") the instants

when the packets (see column 3 lines 48-51 " measuring time a packet arrives...first

packet arrives...second packet arrives") of the selected groups (see Figure 5 "Large

Packet Size" and "Small packet Size" and column 4 lines 5-20 "number or

packets...small packet size set ...large packet size set, and Figure 6B and column 4 lines

31-47 "...bins are compared...any bins are eliminated if...bins...less than average

bandwidth are eliminated...bins are eliminated...selected as the network bandwidth")

are received (see column 3 lines 48-52 "Packet classifier...packet arrives...first packet

arrives....second packet arrives"; the two packets are classified according to arrival time)

by the second point (see Figure 4, 110, 470,475),

means (see fig 4; 105, 402, 403, 110) for calculating the bandwidth (see Figure 6a and

6b 620-640 and column 4 lines 21-24 "procedure for using sets of packet pairs to

determine the bandwidth") according to the number of packets (see column 4 lines 8-10

"the amplitude...indicates the number of packet pairs", and column 4 lines 31-47 "bins

are compared...bins...are eliminated....have a greater amplitude...bins with the highest

remaining amplitude...have an amplitude less than a threshold...are eliminated") of the

selected groups (see Figure 5 "Large Packet Size" and "Small packet Size" and column 4

lines 5-20 "number or packets…small packet size set …large packet size set, and Figure

6B and column 4 lines 31-47 "each set placed in a different bin…bins are compared…any

bins are eliminated if…bins…less than average bandwidth are eliminated…bins are

eliminated…selected as the network bandwidth") and to the total transmission time of

these packets (see column 4 lines 31-32 "time deltas are placed in bins" and column 3

line 48-52 "measuring the time a packet arrives…time the first packet arrives…time

second packet arrives….time delta"; delta depends on packet arrival time, packet arrival

time depends on transit time of the packet).

Gross is silent about:

As regarding claim 1, including a plurality of sub-networks and for each transmission

direction through at least one of said sub-networks and time-stamping received packets.

As regarding claim 4, characterized in that marking of the data packets is achieved at the

transmitting point upon a, request from the receiving point.

As regarding claim 7, characterized in that the telecommunications network is of the IP

type.

As regarding claim 8, a module for marking the transmitted packet and

Zhang et al from the same or similar field of endeavor discloses an adaptive bandwidth

control with the following features:

As regarding claim 1, Zhang discloses including a plurality of sub-networks (see column

7 lines 45-51 " IP address…IP address…internet"; the internet is divided in subnetworks

according to range of logical addresses) and for each transmission direction (see Figure 9;

note arrows in both directions and column 12 lines 10-14 "forward and return paths

seperatley") through at least one of said sub-networks (see column 7 lines 45-51 " IP address…IP address…internet"; the internet is divided in subnetworks according to range of logical addresses) and time-stamping (see column 12 lines 28-31 "arrival timestamps") received packets (see column 12 lines 19-30 "receiving probing packet pair 212',214').

As regarding claim 4, Zhang discloses characterized in that marking (see column 12 lines 30-34 "adds these arrival timestamps in the probing packets 212'', 214'') of the data packets (see Figure 9, 214, 212, 214', 212', 212'', 214'', 212''', 214''') is achieved at the transmitting point (see Figure 9, 210 and see Figure 9, 210/216 and column 12 lines 9-14 "forward and return path separately" and column 8 lines 33-36 "request from a peer…to probe") upon a, request (see column 8 lines 33-36 "request…to probe") from the receiving point (see Figure 9, 210/216 and column 12 lines 9-14 "forward and return path separately" and column 8 lines 33-36 "request from a peer…to probe").

As regarding claim 7, Zhang et al discloses characterized in that the telecommunications network (see Figure 1, 122,124,120 and column 2 lines 41-44 "network") is of the IP type (see column 2 lines 55-60 "have an external IP address" and column 7 line 39 "have a local IP address", column 7 lines 59-62 "IP address").

As regarding claim 8, Zhang discloses a module (see fig 210 and 216 and col 12 lines 28-50 "probed peer") for marking the transmitted packet (see column 12 lines 28-31 "arrival timestamps" and see column 12 lines 30-34 "adds these arrival timestamps in the probing packets 212'', 214'')

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Gross by using the features, as taught by Zhang et al.,

in order to provide a new and improved system and method of managing latency between

peers in a network and a to provide a user with a list of number of peers that meet

acceptable performance criteria (see column 2 line 41-54).

5.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gross (US

6,850,541) in view of Zhang et al. (US 7,133,368) as applied to claim 1 above, and further in

view of Botvich (US 2005/0100009).

For claim 4, the claimed invention is described in paragraph 5.

Gross and Karam are silent about:

As regarding claim 6, characterized in that the evaluation of the bandwidth is achieved

off-line.

Botvich from the same or similar field of endeavor discloses a bandwidth estimation

method with the following features:

As regarding claim 6, Botvich discloses in that the evaluation of the bandwidth (see

section 0037 lines 1-4 "estimating the effective bandwidth off-line") is achieved off-line

(see section 0037 lines 1-4 "estimating the effective bandwidth off-line").

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the system of Gross and Zhang et al by using the features, as taught

by Botvich, in order to provide a method for estimating the ffective bandwidth

requirement, which can be quickly and easily calculated without too much router or

switch capacity being used (see section 00025-0028).

Allowable Subject Matter

6.   Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims.

Response to Arguments

7.   Applicant's arguments filed 04/17/2008 have been fully considered but they are not

persuasive.

On pages 11 and 12, the applicant argues multiple claim limitations that are allegedly not

disclosed by a combination of Gross and Zhang. Specifically, on page 11-12 the applicant

argues, without any specificity or analysis, that "associating a same identifier with quasi-

simultaneously transmitted packets" (page 11 of the response) and "in Gross, no

identifiers are provided at all" (page 12 of the response) is not disclosed by Gross. The

examiner disagrees. "Identify" merely means " to associate in name, feeling, interest,

action, etc." (identifier. (n.d.). *Dictionary.com Unabridged (v 1.1))* . From the pointed out

sections for this claim limitation it is clear that packet pairs have a specific size

associated with them and that they are distinguished between when the time delays are

determined. Thus the size of the packet pairs is used to "identify" the packet pairs.

On page 12, the applicant argues that "identifying and sorting the packet received with

the same identifier", without particular point out or discussing why/how/which of the

limitations are not met. As discussed earlier (and in the sections quoted for this

limitation), the packet pairs are "identified" according to their size. Further, "sorting"

merely means " to assign to a particular class, group, or place", or "to arrange according

to sort, kind, or class", or "classify" (sort. (n.d.). *Dictionary.com Unabridged (v 1.1))*.

Gross discloses a "classifier" that classifies the each packet of the packet pair according

to their arrival time. Once again the packet pairs have the same identifier as discussed

above. Lastly, the applicant argues that the newly amended limitation "selecting the

largest possible integer number m of groups of packet with the same identifier" is not

discloses by Gross. The examiner disagrees. "Selecting" merely means " pick out, select,

or choose from a number of alternatives" (select. (n.d.). *WordNet® 3.0.*), or "To choose

and take from a number" (select. (n.d.). *Webster's Revised Unabridged Dictionary*). In

the pointed out portions of Gross (fig 6b, col 4 lines 31-47, col 4 lines 8-10). In those

quoted sections the Gross reference the method if figure 6a-b (and specifically in 6b),

the method looks through /checks through / compares / select the amplitudes of each bin.

As in the quoted sections the "amplitude" is "number of packet pairs", thus when the bins

are compared the amplitudes are looked through /checked through / compared, i.e. the

number of packet is "selected". Further, in the cited sections all bins are looked through

/checked through / compared including the ones that have the largest amplitude , thus the

method the largest number of packet pairs is "selected". Since the claim is not specific

what kind of group of packets it is and what the quantity "largest possible integer number

" is relative to, the limitation is meet by the largest amplitude bin of a certain packet size

(the identifier as explained above).   Additionally, in the quoted sections the method

further selects (as explained above) bins with "greater amplitude" and "highest remaining

amplitude".

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

8.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

US-2003/0016630 A1	01-2003	Vega-Garcia et al.	370/252
US-6,580,694 B1	06-2003	Baker, Carl R.	370/252
US-2003/0161321 A1	08-2003	Karam et al.	370/395.21
US-6,937,573 B2	08-2005	Chan et al.	370/252
US-2007/0086485 A1	04-2007	Vega-Garcia et al.	370/468

The above are cited to show systems/methods for bandwidth calculation.

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenan Cehic whose telephone number is (571) 270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KC

/Kwang B. Yao/

Supervisory Patent Examiner, Art Unit 2616